PERCHLORATE FACT SHEET

Ammonium Perchlorate is a strong oxidizer which is used as a component of solid rocket fuel and munitions. Ammonium perchlorate is also used in fireworks to produce red and blue colors. Although the source of regional perchlorate contamination is ammonium perchlorate, note that perchlorate is also the conjugate base of perchloric acid. An analysis for perchlorate could be used to detect and quantify perchloric acid, just as nitrate and chloride are used to detect the presence of nitric acid and hydrochloric acid, respectively.

Several drinking water wells in the San Gabriel area (Azusa, Baldwin Park, Irwindale, West Covina and LaPuente) have become contaminated with perchlorate. No promulgated Maximum Contaminant Level exists for perchlorate, however the California Department of Health Services has adopted a provisional standard for perchlorate in drinking water of 18 ug/L. The limit was set because perchlorate ingestion is known to interfere with the ability of the thyroid to produce hormones.

Laboratories must be ELAP certified to perform perchlorate analyses. Del Mar Analytical completed a perchlorate data package and passed an audit in January, 1998. Notification of certification is expected in mid-February.

CHEMICAL FORMULA & MOLECULAR WEIGHT:

perchlorate	ClO_4	Molecular Weight = 99
ammonium perchlorate	NH_4ClO_4	Molecular Weight = 117

ANALYSIS DESCRIPTION:

The perchlorate method is a modification of EPA Method 300. It is an Ion Chromatography technique using a special column and a Sodium Hydroxide solution as an eluent.

EPA Method 300 for common anions uses a different column and a Sodium Bicarbonate solution as an eluent.

Sodium Hydroxide is a very strong eluent and is required for perchlorate due to the high reactivity of perchlorate ion. It is not practical to perform EPA Method 300 and EPA Method 300 modified for perchlorate on the same instrument. Del Mar Analytical has a new Ion Chromatograph dedicated to perchlorate analyses.

ANALYSIS COST:	$ 100 per sample
SAMPLE CONTAINER:	1 LITER PLASTIC, NON-PRESERVED
ANALYSIS HOLD TIME:	28 DAYS (28 days has not been published, however we assume that hold time is the same as Cl, SO_4, etc.)
ANALYSIS DETECTION LIMIT:	4ug/L for Groundwater Untried on soil at this time

TEMPE, AZ OFFICE (602) 968-8272

DEL MAR ANALYTICAL CONTACT: KAREN GRAVES

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